

# Administrative and managerial issues of tax reforms

## Административно-управленческие проблемы налоговых реформ

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### THE ROLE OF TAXES IN RUSSIAN NATIONAL SECURITY

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**ABSTRACT** The paper tries to identify the impact of fiscal system on national security. The author evaluates the acting Strategy of National Security of Russia, analyses national fiscal policies, and contrasts different points of view on national fiscal security. The paper also contains a new definition of fiscal security as the capacity of national economy to generate tax revenues sufficient to cover the expenditures related to national security. To assess the role of taxes in national security a correlation study of tax revenues and individual types of budgetary expenditures in 2005–2015 was conducted. It was found that most strategic priorities of state funding correlate with tax revenues. However expenditures on national economy and environmental protection correlate with tax revenues to the lesser extent. Tax revenue elasticity of budgetary expenditures was calculated as well. The results showed a strong dependence of crime level on tax revenues of the state budget. The research period witnessed a growth in budgetary expenditures on law enforcement accompanied by a decline in crime level, and vice versa a cut in funding resulted in higher crime level. National defense is less dependent on tax revenues. Regardless of annual growth in military funding armed forces showed a decline in quantitative indicators

**KEYWORDS** National security, tax, budget, National Security Strategy, fiscal security, defensive capacity, public order, correlation

#### HIGHLIGHTS

1. Most strategic directions of Russian budget expenses have close correlation with the amount of tax revenues
2. The level of law enforcement and public safety in Russia directly depends on the amount of tax revenues to the budget
3. Russia's defense capacity depends on the state tax income insignificantly because the dynamics of budget tax revenues does not influence the changes of Russia's defense capacity indicators substantially

### РОЛЬ НАЛОГОВ В ОБЕСПЕЧЕНИИ НАЦИОНАЛЬНОЙ БЕЗОПАСНОСТИ РОССИИ

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**АННОТАЦИЯ** В статье исследуется влияние налоговой системы государства на обеспечение национальной безопасности страны: дается оценка действующей Стратегии национальной безопасности Российской Федерации, рассматриваются аспекты налоговой политики государства, влияющие на обеспечение национальной безопасности, анализируются мнения некоторых исследователей, касающиеся содержания налоговой безопасности страны.

Сформулировано авторское понятие налоговой безопасности как способности национальной экономики генерировать налоговые поступления в объеме, достаточном для финансирования государственных расходов, обеспечивающих национальную безопасность страны. Для оценки роли налогов в обеспечении национальной безопасности России проводился корреляционный анализ взаимосвязи динамики налоговых доходов и отдельных видов государственных расходов за 2005–2015 гг. Выявлено, что большинство стратегических направлений государственных расходов имеют тесную корреляционную зависимость от величины налоговых поступлений. Наименьший уровень корреляционной зависимости имеют расходы на национальную экономику и охрану окружающей среды. В работе также проанализирована эластичность отдельных видов расходов консолидированного бюджета России по налоговым доходам. Для этой цели производился расчет коэффициентов эластичности указанных бюджетных расходов по налоговым доходам. В результате исследования выявлено, что уровень правопорядка и общественной безопасности в стране напрямую зависит от величины налоговых поступлений в бюджет. Наблюдаемый в анализируемом периоде рост бюджетных расходов на правоохранительную деятельность сопровождался снижением уровня преступности в стране, а снижение бюджетных расходов приводило к росту преступности. Обороноспособность страны в меньшей степени зависит от налоговых поступлений. Однако, несмотря на ежегодное увеличение бюджетных расходов на национальную оборону, количественные показатели, характеризующие состояние вооруженных сил страны, обычно снижались

**КЛЮЧЕВЫЕ СЛОВА** Национальная безопасность, налог, бюджет, Стратегия национальной безопасности, налоговая безопасность, обороноспособность, правопорядок, корреляционный анализ

#### **ОСНОВНЫЕ ПОЛОЖЕНИЯ**

1. Большинство стратегических направлений расходов государственного бюджета России имеют тесную корреляционную зависимость от величины налоговых доходов
2. Уровень правопорядка и общественной безопасности в России напрямую зависит от величины налоговых поступлений в бюджет
3. Обороноспособность России в незначительной степени зависит от налоговых доходов государства, так как динамика налоговых поступлений в бюджет не оказывает существенного влияния на изменение показателей обороноспособности страны

#### **Introduction**

The national security strategy of the Russian Federation (hereinafter — the Strategy) ratified in 2015 is the core document of strategic planning in Russia, which defines the main national interests and priorities, as well as goals, objectives and domestic and foreign policy measures aimed at strengthening national security and long term sustainability. Implementation of the Strategy depends to a great extent on national economic performance. Altogether we think that the Strategy pays insufficient attention to fiscal tax system which is the key source of national income.

The Strategy, when viewing the ways to ensure national economic security, raises the issue of taxes only twice. Namely,

the Strategy considers stability of the fiscal system as a means to improve the attractiveness of Russian legal system, facilitating business activity and healthy competition. Also the Strategy contains an objective to stimulate SMEs growth through the ease of tax burden. However the role of fiscal system is much wider when national security is concerned. Thus this paper aims at revealing the whole gamut of effects that fiscal system has on national security.

#### **Literature review**

Extant research explores individual aspects of the impact that fiscal system has on national security. Palishkina names tax evasion the main threat to national security [1]. Shuvalova, Solyarik and Zakharova

state that taxes and fiscal policy are the core element in national security system, but at the same time nowadays the fiscal system of the Russian Federation mainly presents a source of threats to economic security rather than a means of its achievement [2, p. 51, 54].

A number of authors use the term “fiscal security” defined by Pimenov as such a state of the economy and business actors when they are protected from fiscal risks [3]. Foreign papers explore technical aspects of fiscal security attainment. Thus Piazza studies the problem of low information security in electronic databases of the American IRS which endangers the confidentiality and integrity of management systems and taxpayers’ data [4]. On the other hand most researchers view fiscal security as a state of uninterrupted inflow of taxes to the state budget ensuring sufficient funding of necessary budgetary expenditures. Namely, Kostyukov and Maslov define fiscal security as such a condition under which the sum of collected taxes corresponds to the sum of total planned activities necessary to fulfill its current and perspective duties on the national and municipal levels [5, p. 119]. Common in their essence definitions are given by Anishenko [6], Fedorova [7], Kormishkina and Koroleva [8]. Our paper also focuses on the way to assess the capacity of national economy to generate tax revenues sufficient to cover national security related expenditures of the state.

In its turn the aggregate sum of budgetary expenditures backed by tax revenues doesn’t guarantee an effective performance of state functions in any sphere. So many researchers paid considerable attention to the impact of state revenues and budgetary expenditures on various aspects of national security and namely the defensive capacity of the state.

The role of state revenues in ensuring the defensive capacity is pointed out by many researchers. Astakhov writes that “state finance, their assignment, functions, role in reinvestment, and structure during the Great Patriotic War predefined

the victory of the Soviet people” [9, p. 17]. A similar point of view is expressed by Panskov [10]. And to some extent the same is meant in a popularly known expression attributed to Napoleon I: “For war we need three things-money, money and more money” [11, p. 191]. Lapidus [12], Hebert [13], and Powers [14] research separate aspects of state military expenditures.

Adam Smith names military expenditures the most important of all state spending: “The first duty of the sovereign, that of protecting the society from the violence and invasion of other independent societies, can be performed only by means of a military force” [15, p. 536] and further on, “defending the society from the violence and injustice of other independent societies, grows gradually more and more expensive as the society advances in civilization. The military force of the society, which originally cost the sovereign no expense either in time of peace or in time of war, must, in the progress of improvement, first be maintained by him in time of war, and afterwards even in time of peace” [15, p. 548–549]. Smith calls tax revenues the key source of state income, thus insufficient tax revenues have an adverse effect on defensive capacity.

An example of how taxes affect defensive capacity can be drawn from the peculiarities of Britain’s financial ties with its North-American colonies in the XVIII century. At that time colonies didn’t have their own regular military force and they were not regularly taxed as there was no need for state military expenditures. Thus all military expenditures aimed at protection of the colonies were incurred by the British budget. So according to Smith colonies presented a burden rather than a benefit for their state: “The colonies of Spain and Portugal only have contributed any revenue towards the defense of the mother country, or the support of her civil government. The taxes which have been levied upon those of other European nations, upon those of England in particular, have seldom been equal to the expense

laid out upon them in time of peace, and never sufficient to defray that which they occasioned in time of war. Such colonies, therefore, have been a source of expense and not of revenue to their respective mother countries" [15, p. 459–460]. So in his book *An Inquiry Into the Nature and Causes of the Wealth of Nations* published during the American war for independence Smith does not mention the fact that one of the main reasons of that war was the wish of local government to repeal the taxes levied shortly before the war by the British rule, taxes which the Great Britain considered a fair source to cover the military expenditures on protection of the colonies. Thus until the regular military was not needed the taxes were not needed too; and when an independent state was created the need to maintain the army resulted in the introduction of regular taxes.

### Methods

Strategic national priorities of the Russian Federation stated in the Strategy (Article 31) can be divided into 2 groups. The first one includes those directly related to the national security, its protection and survival of the population, namely the two main ones related to national defense and national and social security. The rest 7 priorities are related to national security indirectly, they rather support national security and they comprise socio-economic aspects as ensuring better quality of life for Russian citizens; economic growth; science, technology and education; healthcare; culture; environmental protection and efficient use of natural resources; strategic stability and equal strategic partnership.

Such a wide interpretation of national security, encompassing along with military forces also the socio-economic aspects indirectly affecting the national defensive capacity, is what differentiates the Russian Strategy from those of other countries. For instance, the national security strategy of Poland contains only 3 priorities directly aimed at strengthening the defensive capacity under NATO [16, p. 184–185].

There are various sources of funding the aforementioned strategic priorities of national security. The first group of priorities is solely funded by the state budget from the tax revenues. The second group of priorities is financed by a combination of budgetary and non-budgetary sources. Besides some priorities, mainly the ones related to social policies significantly rely on budgetary funding, and economic priorities derive their support mostly from non-budgetary sources. The final priority related to strategic stability and equal strategic partnership is a part of national foreign policy and is funded from the budget.

To assess the role of taxes in the national security system we conducted a correlation study between dynamics of the tax revenues in the consolidated national budget and funding of the aforementioned strategic priorities of Russian national security from the consolidated budget. Besides we examined tax revenue elasticity of budgetary expenditures on strategic priorities. For that purpose we calculated tax revenues elasticity coefficients of the budgetary expenditures.

Concerning the two main strategic priorities of national security (defensive capacity and social security) we conducted a correlation analysis between the dynamics of their funding and the core indicators of national security in those spheres (namely defensive capacity; crime level). The resulting data allowed us to evaluate the extent of influence certain budgetary expenditures have on national security in Russia. The correlation study between various kinds of state expenditures and tax revenues allowed assessing the role of taxes in the key elements of Russian national security system – defensive capacity and public order.

### Results

Figure 1 shows the flows of tax revenues and the main national security-related expenditures of Russian consolidated budget in the recent period. Tax revenues include taxes and social security payments being the core source of social

spending which influence the national security indirectly.

We can see that tax revenues correlate with some expenditures at the coefficient value close to 1. It means that budgetary expenditures changed in line with growth or decline of tax revenues. Altogether certain expenditures were growing over the period at a faster rate than the rest and exceeded tax revenues. So by 2015 tax revenues were 1.4 times higher than in 2005, while state defense expenditures and social spending (mainly pension payout) grew 2.3 times. Correlation coefficients

were calculated based on CPI-adjusted longitudinal data (in prices of 2005) to eliminate the interference of inflation for it automatically raises both tax revenues and budgetary expenditures. In current prices the coefficient value exceeded 0.9 for all expenditures.

A strong correlation between tax revenues and budget expenditures on strategic priorities of national security is proved by the analysis of tax revenue elasticity of expenditures (Table 2). Elasticity coefficients calculated by the formula (1) show the interdependence of

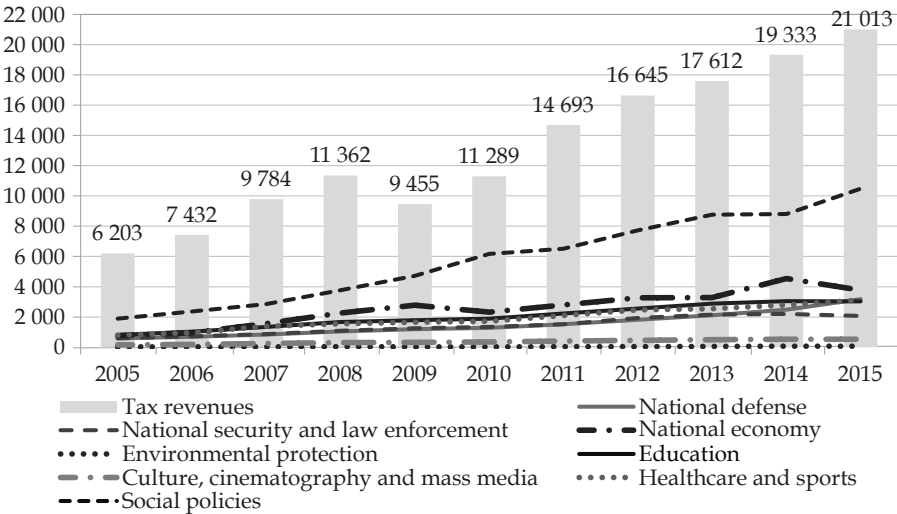


Figure 1. Tax revenues and main expenditures of consolidated budget of the Russian Federation in 2005–2015, current prices, billion rubles

Figure uses the data of the Federal Treasury of the RF on consolidated budget implementation (<http://www.roskazna.ru>)

Table 1  
Growth rates and correlation coefficients for tax revenues and budgetary expenditures in 2005–2015 (in prices of 2005)

Revenues and expenditures	2015 growth rate to 2005, %	Correlation coefficient
Tax revenues	139.1	–
National security	224.7	0.7185
National security and law enforcement	145.5	0.7212
National economy	202.9	0.5864
Environmental protection	135.1	0.6599
Education	155.5	0.8008
Culture, cinematography and mass media	139.2	0.7656
Healthcare and sports	160.6	0.8727
Social policies	227.9	0.6385

Table uses the data of the Federal Treasury of the RF on consolidated budget implementation (<http://www.roskazna.ru>).



the chosen variables and illustrate how a change in tax revenues affects certain expenditures of the budget annually. The closer the coefficient is to 1 the higher the elasticity. If the coefficient equals 1 it means that expenditures change in line with tax revenues.

$$E_j = \frac{\Delta S_{ji}}{S_{ji}} / \frac{\Delta TR_i}{TR_i}, \quad (1)$$

where  $E_j$  is elasticity coefficient of  $j$ -type budgetary expenditures;  $S_{ji}$  is consolidated budget expenditures of  $j$ -type in the year  $i$ ;  $\Delta S_{ji}$  is the change in consolidated budget expenditures of  $j$ -type in the year  $i$ ;  $TR_i$  is tax revenues of consolidated budget in the year  $i$ ;  $\Delta TR_i$  is the change in tax revenues of consolidated budget in the year  $i$ .

More often tax revenues correlated with different budgetary expenditures, in 56 cases out of 80 the elasticity coefficient had a positive value, which means that real increase in tax revenues results in real (inflation-adjusted) growth of budgetary expenditures. When the elasticity coefficient has a negative value it's a sign of an inverse correlation of the variables, which was the case in the crisis year 2009 and during the recession in 2013 and 2015 when a decline in real tax revenues witnessed an increase in budgetary expenditures; an analogous situation happened in 2010 when regardless of some increase in tax revenues the budgetary expenditures were cut. Thus in some years tax revenue

elasticity of budgetary expenditures was low, only in 24 cases out of 80 the coefficient deviated from 1 at less than 50 %.

On the average during the entire period 2 types of budgetary expenditures, national defense (−0.65) and social policies (−0.30), exhibit a negative tax revenue elasticity. It shows their low responsiveness to changes in budget revenues. These expenditures are determined by national priorities and government's policies and are independent of tax revenue changes. This in turn also means that even when budget revenues are not sufficient, the cuts are made in other spheres rather than national defense and social policies.

High elasticity reaching the value of 1 was exhibited by such expenditure types as healthcare, culture and environmental protection. The volumes of funding in those types usually depend on revenues and mainly on the tax revenues. Furthermore all types of budgetary expenditures over the period (2005–2015) are positively tax revenue elastic at the value close to 1 and in the case of only three types the value deviated from one by more than 50 %.

A somewhat stabilizing role in equalizing the budgetary expenditure volumes regardless of tax revenues was played by the Stabilization Fund and subsequently by the Reserve Fund and the National Welfare Fund. As seen from Figure 2 aggregate revenues of the consolidated bud-

Table 2

**Tax revenue elasticity of consolidated budget expenditures in 2005–2015**

Budget expenditures	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average	2015 to 2005
National defense	0.75	0.62	2.90	−0.02	−0.14	0.50	1.78	−10.87	3.22	−5.27	−0.65	1.97
Law-enforcement	1.23	0.58	3.14	−0.02	−0.14	0.25	2.60	−6.35	−1.63	7.16	0.68	1.11
National economy	1.44	1.95	6.26	−0.22	−3.41	0.58	1.49	8.45	7.73	13.65	3.79	1.80
Environmental protection	−0.51	0.24	1.36	0.54	−1.55	1.23	0.82	−2.69	9.62	3.63	1.27	0.92
Education	1.91	0.92	2.66	0.16	−0.28	0.47	1.17	−7.46	−0.43	4.60	0.37	1.27
Culture	1.29	0.96	3.10	0.23	0.01	0.32	0.87	−2.37	0.03	5.09	0.95	1.00
Healthcare and sports	1.09	1.40	0.01	0.17	−0.59	0.69	1.57	5.04	1.01	−0.15	1.02	1.34
Social policies	1.50	0.57	4.19	−0.26	1.90	−0.20	1.68	−7.86	−1.99	−2.57	−0.30	1.99

Table uses the data of the Federal Treasury of the RF on consolidated budget implementation (<http://www.roskazna.ru>)

get exceeded the aggregate expenditures over 2005–2012. During this period a portion of tax revenues was reserved in stabilization funds and was not assigned to budgetary expenditures of a current year. Insignificant sums spent by stabilization funds over 2005–2007 (0.4–0.7 billion rubles) were assigned to paying off the foreign national debt and covering the deficits of the national budget and the Pension Fund budget. Larger sums (1.1–3.1 billion rubles) were spent by stabilization funds on implementation of prioritized expenditures regardless of tax revenue decrease in all budgets. This explains a low dependency of some expenditure types on tax revenue volumes.

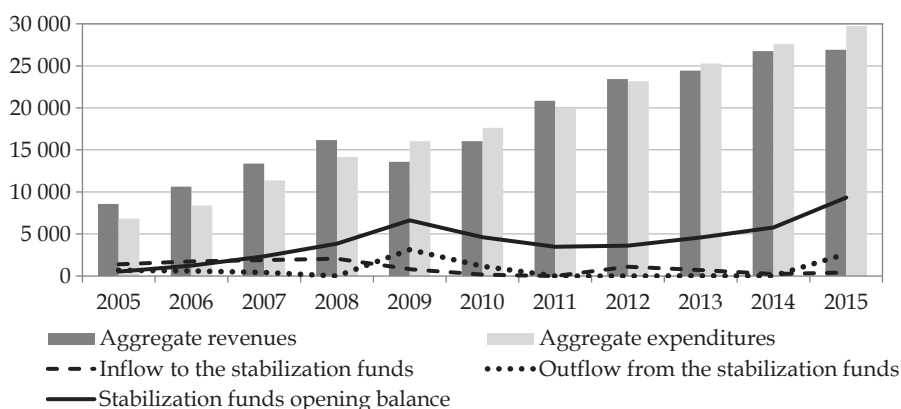
To evaluate the effectiveness of state expenditures on the first group of strategic priorities, the ones related to defense and public security, we analyzed how budgetary spending affected the indicators characterizing the two spheres.

Indicators of defensive capacity mainly are classified but a few of them can be found in open sources. Most of the indicators suggested by Bogatyrev, Makiev and Malyshev (2013) as the ones characterizing national military and political situation contain classified data, such as the share of critically important objects (CIOs) protected by air and civil defense capabilities using modern weapons, modern mili-

tary and specialized equipment status of the Armed Forces of the Russian Federation, availability of military and engineering human resources [17, p. 50]. Of all the suggested indicators only the ones characterizing the budgetary funding of defense are not classified.

However international publications contain certain data on defensive capacity of Russia. International Institute for Strategic Studies publishes an annual catalogue of military and defensive potential of 170 countries (The Military Balance). Using these data we conducted a correlation study of military expenditures and defensive capacity indicators of Russia over 2005–2015.

Figure 3 shows the dynamic of defensive capacity indicators against the military expenditures in Russia in prices of 2005 (inflation-adjusted). The period witnessed significant disarmament: the size of armed forces decreased by 36 %; the quantity of intercontinental ballistic vehicles was cut down by 40 %; the number of combat aircrafts dropped by 31 %; only the number of submarines showed some growth – by 16 %. The process of disarmament paralleled a constant growth of budgetary expenditures on defense: they rose from 0.6 to 3.2 billion rubles in current prices over 2005–2015 which equaled to 2.2 times in real terms.



**Figure 2. Implementation of consolidated budget of the Russian Federation and the volumes of stabilization funds over 2005–2015, billion rubles**

Figure uses the data of the Federal Treasury of the RF on consolidated budget implementation (<http://www.roskazna.ru>), of the Ministry of Finance of the RF (<http://minfin.ru/ru/performance/reservefund/statistics/balances/>), of the archives of the Ministry of Finance web-site; (<http://old.minfin.ru/ru/stabfund/statistics/remains/index.php?id>)

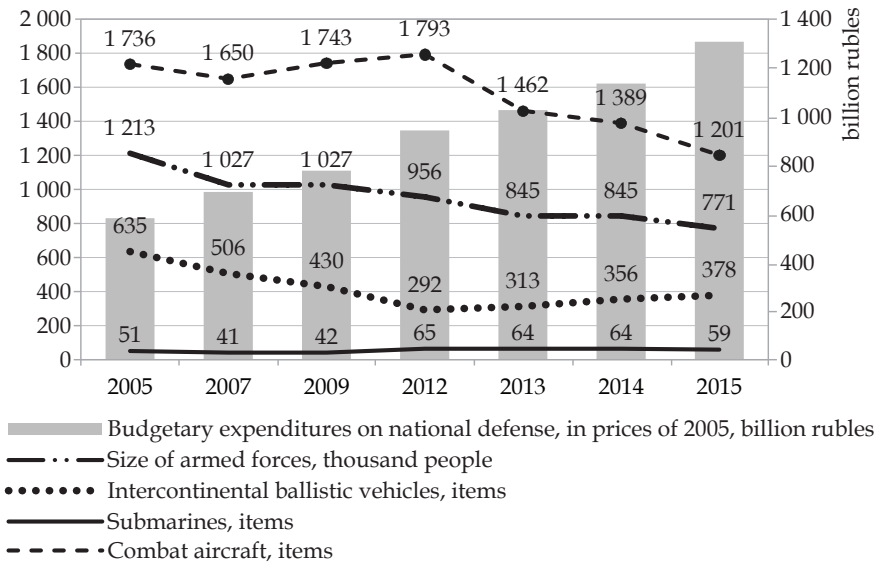


Figure 3. Defensive capacity of Russia and military expenditures over 2005–2015

Figure derived the data from: *The Military Balance 2004–2005. The annual assessment of global military capabilities and defence economics / The International Institute for Strategic Studies (IISS). London, UK. 2005, 398 p.*; *The Military Balance 2007. The annual assessment of global military capabilities and defence economics / The International Institute for Strategic Studies (IISS). London, UK. 2007, 452 p.*; *The Military Balance 2009. The annual assessment of global military capabilities and defence economics / The International Institute for Strategic Studies (IISS). London, UK. 2009, 488 p.*; *The Military Balance 2011. The annual assessment of global military capabilities and defence economics / The International Institute for Strategic Studies (IISS). London, UK. 2011, 482 p.*; *The Military Balance 2012. The annual assessment of global military capabilities and defence economics / The International Institute for Strategic Studies (IISS). London, UK. 2012, 504 p.*; *The Military Balance 2013. The annual assessment of global military capabilities and defence economics / The International Institute for Strategic Studies (IISS). London, UK. 2013, 572 p.*; *The Military Balance 2014. The annual assessment of global military capabilities and defence economics / The International Institute for Strategic Studies (IISS). London, UK. 2014, 504 p.*; *The Military Balance 2015. The annual assessment of global military capabilities and defence economics / The International Institute for Strategic Studies (IISS). London, UK. 2015, 504 p.*; Federal Treasury of Russia, data on consolidated budget implementation (<http://www.roskazna.ru>)

The analysis paradoxically shows that military expenditures and defensive capacity indicators correlate inversely: the more budgetary funds are assigned to the military the less equipped and populated it becomes. It is supported by correlation coefficients values given in table 3. Military expenditures correlate with the size of armed forces at the value of  $-0.9549$  which is a strong inverse correlation. The decline in the size of armed forces paralleled a steady decline in military expenditures. A weaker correlation was exhibited by military expenditures and the quantity of intercontinental ballistic vehicles ( $-0.7431$ ), and the number of combat aircrafts ( $-0.8427$ ). And it is only the number of submarines with which military expenditures correlated positively ( $0.6869$ ).

Table 3  
Growth rates and correlation coefficients of military expenditures with defensive capacity indicators of Russia over 2005–2015

Indicator	Growth rate, %	Correlation
Military expenditures	224.7	–
Size of armed forces	63.6	–0.9549
Intercontinental ballistic vehicles	59.5	–0.7431
Submarines	115.7	0.6869
Combat aircraft	69.2	–0.8427

A strong inverse correlation of military expenditures and defensive capacity indicators supports the results of elasticity study of the same variables, given in table 4. Elasticity coefficients were cal-



culated by formula (2) which describes how the change in military expenditures affected the change in defensive capacity indicators.

$$E_m = \frac{\Delta M_i}{M_i} / \frac{\Delta S_{mi}}{S_{mi}}, \quad (2)$$

where  $E_m$  is elasticity coefficient of defensive capacity indicator;  $M_i$  is defensive capacity indicator over the year  $i$ ;  $\Delta M_i$  is the variation of defensive capacity indicator in the year  $i$ ;  $S_{mi}$  is military expenditures in the year  $i$ ;  $\Delta S_{mi}$  is the variation of military expenditures over the year  $i$ .

Elasticity was mostly negative over the period, in 67 % of cases, so the growth in military expenditures was accompanied by a decline in defensive capacity indicators. In 3 cases the effect was neutral – the elasticity coefficient was equal to 0. Very often, in 71 % of the cases, the coefficient deviated from 1 by more than 0.5 in both directions. It speaks for a lack of steady correlation between military expenditures and defensive capacity. But only the elasticity study helped discover the stable negative effect of expenditure variation on the size of army and numbers of ICBVs and combat aircraft.

The results can be explained by a recent growth in the quality of defensive capacity inadvertently accompanied by a decline in quantitative indicators, military equipment was renewed, and armed forces became more prepared to combat. Thus it is difficult to evaluate the dependence of defensive capacity on budgetary expenditures precisely. So we can deduce that higher expenditures result in higher defensive capacity regardless of a decline in quantitative indicators.

However we discovered that budgetary expenditures closely correlate with law enforcement and public security. To find this relationship we conducted a correlation study of law enforcement expenditures and 4 indicators of crime and public order in Russia over 2005–2015. However representativeness of the chosen indicators could be questioned. Harry P. Hatry (Hatry, 1999) claims that law-enforcement agencies tend to tamper with monitoring results as they reflect their performance [18]. Thus we can see a conflict of interests: police are a source of information for statistical databases on crime, so they can manipulate certain indicators to hide their own failure. Namely they artificially cut down the number of crimes by refusing to open investigations. But we argue that the process of data collection eliminates total unreliability of crime indicators, though a certain lack of representativeness might be present. Thus the data can be used for the purposes of our research.

Figure 4 presents indicators of crime level in Russia over the period 2005–2015 against law-enforcement expenditures of consolidated national budget in comparable prices of 2005. The period witnessed a steady growth of such expenditures except 2010 and 2014 when the funding dropped slightly (by less than 5 %) and 2015 when there was a substantial cut on funds (15 %). At the same time crime level indicators showed a decrease, with an exception of 2015 when the crime level rose considerably. The analysis showed a stable inverse correlation of law-enforcement expenditures and crime level, meaning the more funds is spend on law enforcement the better they cope with their duties.

Table 4

**Military expenditure elasticity of defensive capacity indicators,  
Russia, 2005–2015**

Indicator	2007	2009	2012	2013	2014	2015	Average throughout the period	2015 to 2005
Size of armed forces	-1.15	0.00	-0.42	-1.61	0.00	-0.73	-0.65	-1.03
Intercontinental ballistic vehicles	-1.63	-1.57	-2.70	0.82	1.26	0.44	-0.56	-1.23
Submarines	-1.56	0.21	2.02	-0.19	0.00	-0.64	-0.03	0.24
Combat aircraft	-0.33	0.47	0.16	-2.78	-0.55	-1.19	-0.70	-0.80

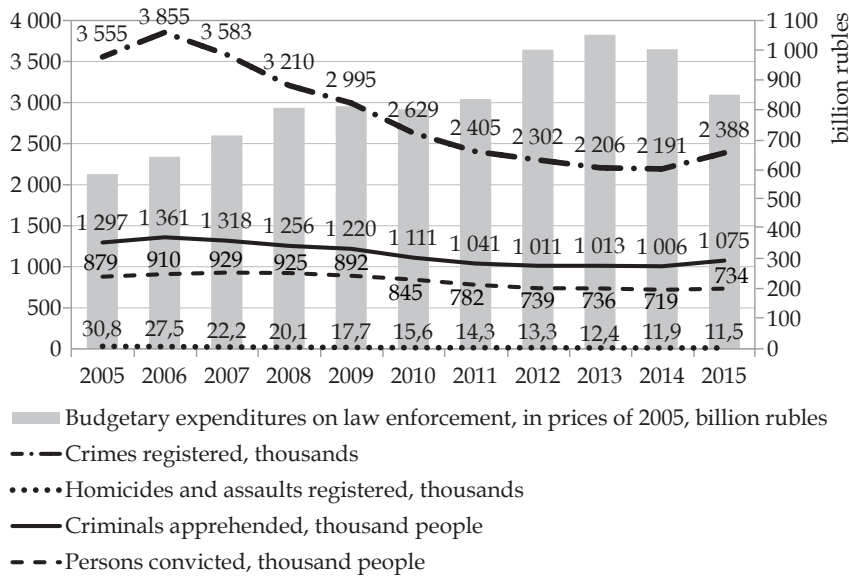


Figure 4. Dynamics of crime level and expenditures on law enforcement in Russia over 2005–2015

Figure uses the data derived from: Russia in numbers. 2016: stat. digest. Moscow. 2016, pp. 176–178; Russia in numbers. 2011: Stat. digest. Moscow. 2011, p. 164–166; Federal Treasury of the RF on consolidated budget implementation (<http://www.roskazna.ru>)

As seen from the results presented in table 5 the inverse correlation between budgetary funding and crime level is confirmed by correlation coefficients of these variables which are close to 1 (–0.8 and –0.9). So while the period was marked by a 46 % real growth in budget funding the crime level indicators showed a significant decline, and the number of homicides and assaults dropped by 63 %.

Table 5  
Growth rate and correlation of expenditures on law enforcement and crime level in Russia over 2005–2015

Indicator	Growth rate, %	Correlation
Expenditures on law enforcement	145.5	–
Crimes registered	67.2	–0.8913
Homicides and assaults registered	37.3	–0.8920
Criminals apprehended	82.9	–0.8811
Persons convicted	83.5	–0.7947

Budgetary funding elasticity of crime level calculated by formula (3) showed

that although the variables do not exhibit constant correlation but in 65 % of cases it has a negative value. The least elastic crimes were homicides with the value of elasticity at –5.4, which means that homicide level drop outstripped the growth of budget funds. Results are given in table 6.

$$E_i = \frac{\Delta L_i}{L_i} / \frac{\Delta S_{li}}{S_{li}}, \tag{3}$$

where  $E_i$  is crime level elasticity coefficient;  $L_i$  is crime level in the year  $i$ ;  $\Delta L_i$  is the change of crime level in the year  $i$ ;  $S_{li}$  is law enforcement related budgetary expenditures in the year  $i$ ;  $\Delta S_{li}$  is the change in law enforcement related expenditures in the year  $i$ .

We need to note that law enforcement related expenditures are very elastic against tax revenues – the volume of such expenditures is immediately dependent upon the volume of tax revenues of the budget. Thus there is an indirect relationship between tax revenues and crime level and public security in Russia.

Table 6

## Law enforcement funding elasticity of crime level in 2005–2015

Offense	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average over the period	2015 to 2005
Crimes registered	0.85	-0.76	-1.02	-10.46	11.55	-2.31	-0.27	-0.91	0.14	-0.46	-0.36	-1.56
Homicides and assaults registered	-1.32	-2.40	-0.91	-19.76	11.17	-2.25	-0.46	-1.52	0.86	0.19	-1.64	-5.37
Criminals apprehended	0.52	-0.33	-0.43	-4.30	8.14	-1.66	-0.18	0.04	0.14	-0.36	0.16	-0.66
Persons convicted	0.37	0.21	-0.04	-5.39	4.62	-1.99	-0.35	-0.09	0.49	-0.11	-0.23	-0.63

### Conclusions

Results of our research identify the extent to which the fiscal system impacts national security in Russia. Implementation of some strategic national priorities (such as national and public security) depends on tax revenues of the budget. Thus a drop in tax revenues immediately results in funding cuts in law enforcement, which in turn causes crime level to rise and overall national security to decline.

Other strategic national priorities such as national defense and quality of life are less dependent on changes in fiscal performance. Russian government funds defense according to the program of military development regardless of the changes in tax revenues; thus they hardly ever influence the national defensive capacity of Russia. However such a funding principle is mainly a result of abundant financial reserves able to compensate the drop in tax revenues without cuts on defense funding.

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